

## Assessing the Integrity of Spillway Foundations

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The erosion under a spillway can be a long-term issue that threatens the structural integrity of a water reservoir. The spillway under investigation was suspected to be defective after it had been commissioned in 1987 (Figure 1). Potholes and subsurface cavities were confirmed in the safety assessment using various NDT techniques including ground penetrating radar and impact echo. The GPR inspection was able to differentiate the intact region from the cavities under concrete slabs (Figure 2). The impact echo results and associated analyses provided further evidence of inferior condition in the soil under the concrete slabs. The engineering team designed and executed the repair project based on the conclusion of the integrity assessment. Subsequent GPR inspection has been performed so as to monitor the integrity of the spillway in a period of 18 months following the repair.

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Figure 1



Figure 2